COLLEGE OF ENGINEERING

Dean - ***Lakshmi Reddi, Ph.D., P.E.***

Associate Dean (Academic Programs) - ***David Jauregui, Ph.D., P.E.***

Associate Dean (Research) - ***Satyajayant Misra, Ph.D.***

Associate Dean (Outreach and Recruitment) - ***Patricia Sullivan, Ph.D.***

Assistant Dean (Student Success and Experiential Learning) - ***Gabe Garcia, Ph.D.***

College Chief of Staff - ***Linda Fresques***

The College of Engineering comprises six departments:

- Chemical Engineering (https://catalogs.nmsu.edu/nmsu/engineering/chemical-materials-engineering/);
- Civil Engineering (https://catalogs.nmsu.edu/nmsu/engineering/civil-engineering/);
- Electrical and Computer Engineering (https://catalogs.nmsu.edu/nmsu/engineering/electrical-computer-engineering/);
- Engineering Technology and Surveying Engineering (https://catalogs.nmsu.edu/nmsu/engineering/engineering-technology-surveying/);
- Industrial Engineering (https://catalogs.nmsu.edu/nmsu/engineering/industrial-engineering/); and
- Mechanical and Aerospace Engineering (https://catalogs.nmsu.edu/nmsu/engineering/mechanical-aerospace-engineering/).

Mission of the College of Engineering

The College of Engineering will uphold the land grant mission of NMSU through nationally recognized programs in education, research and professional and public service.

With respect to our undergraduate programs, we will accomplish our mission by focusing on the following goals:

1. To be nationally and internationally recognized for academic and research programs in engineering and engineering technology.
2. Provide world-class engineers and engineering technologists for industrial, government, and academic constituents of the College of Engineering.
3. To be the University of Choice for undergraduate engineering and engineering technology education in the region.
4. To serve as an engine for economic development in New Mexico through the advancement of engineering and technology.

Furthermore, graduates receiving baccalaureate degrees will demonstrate:

- an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
- an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors
- an ability to communicate effectively with a range of audiences
- an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts
- an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives
- an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
- an ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

Undergraduate Student Advisement

Starting with the fall 2017 semester, students entering the College of Engineering will be advised by the Center for Academic Advising and Student Support (CAASS) located in Educational Services, Suite 200. Students may also change majors at the CAASS. Students uncertain about choosing a major may list themselves as undeclared in the College of Engineering and be advised by the CAASS. Undeclared students will be asked to choose a major after two semesters in the college. Students are encouraged to consult with departmental mentors on subjects related to course offerings, student organizations, internships, research opportunities, graduate education, and career options. Students must have a declared major in order to graduate.

Undergraduate General Education

With the exception of math and science, the college accepts all coursework approved for inclusion in the New Mexico General Education Common Core. Calculus I, General Chemistry I and Engineering Physics I are required to satisfy areas II and III of the common core.

S/U Coursework

The college requires most degree requirements to be taken with traditional grading. Students may take selected humanities and social science courses under the S/U option. Other exceptions are specifically noted in the program descriptions later in this catalog.

Undergraduate Math Placement

Entering freshmen are placed into an appropriate math course based upon the results of the Math Placement Exam administered regularly by the NMSU mathematics department. Students with advanced placement or transfer credit for mathematics will be placed accordingly.

Minors

Minors are available from most departments within the College of Engineering, and they are outlined in the individual program descriptions.

Undergraduate Cooperative Education

After two semesters of satisfactory academic work (2.5 GPA or higher), an engineering student may go on a work phase with one of the many companies or governmental agencies with which the university has co-op agreements. The experience obtained through alternating periods of academic and field work greatly contributes to the preparation of a student for professional life. Work phases are considered to be a vital part of the educational process, and students are counseled in the selection of co-op positions that will lead to progressive learning experiences.

Earnings while on work phase provide a source of financial assistance to meet educational expenses.

A significant number of undergraduate engineering students are in the cooperative education program. Students may, with the approval of their Department Head, earn credit while participating in a co-op work phase. Co-op credits do not normally count toward the degree requirements, but are displayed on the transcript.

Undergraduate General Academic Requirements

For regular admission to the university and the College of Engineering, incoming freshman and transfer applicants must meet the university's qualifications for regular admission as stated in the undergraduate catalog in effect at the time of application. Students admitted to the College of Engineering will be classified by the college as a PRE-[major] until the standard requirements described below for admission to the program major are met.

PRE-[major] students will be admitted into their respective programs once they have earned a minimum grade of C- in all of the following courses:

Prefix	Title	Credits
CHEM 1215G	General Chemistry I Lecture and Laboratory for STEM Majors	4
or CHEM 1120G (engineering technology)		
ENGL 1110G/1110H/1110M	Composition I	4
MATH 1511G	Calculus and Analytic Geometry I	4
or MATH 1430G (engineering technology)		
PHYS 1310G	Calculus -Based Physics I	3
or PHYS 1230G (engineering technology)		

Any of the above courses with earned AP credit (minimum score of 3) is exempt from the list. Transfer students may meet this criteria with determined passing credit of equivalent courses. PRE-[major] students will be advised by their EG-[major] department.

NMSU College of Engineering reserves the right to independently test any student's English proficiency upon arrival, including those who have earned scores satisfying minimum admission criteria. If the demonstrated level of English proficiency is not sufficient for academic success as determined by university regulations, support classes may be required to improve proficiency.

Students must earn a minimum cumulative GPA of 2.0 before enrolling in engineering courses numbered 300 or above. Students seeking to continue in engineering upper division courses with a GPA below 2.0 need to meet with the Associate Dean of Academics to create a course plan designed to increase their GPA and meet this criteria.

Students must earn a grade of C- or better in all engineering, technology, math and science courses (including associated prerequisite courses) required for the degree and also courses taken to satisfy the general education requirements for Area I-Communications, Area II-Mathematics, and Area III-Laboratory Sciences. If a grade lower than C- is earned in any of these courses, the student is required to retake the course immediately the next semester it is offered. Students who earn a grade less than a C- the first time will be contacted by the department and/or academic advising center and advised about this policy and resources to help in their academic success. If the student fails to achieve a C- or better in any of these courses a second time, then the student must submit a written request to the Associate Dean of Academics in the College of Engineering to enroll in the course a third time. The student should explain the circumstances impacting their grade and the actions planned to improve their performance.

Digital Badges

Learning a knowledge-based skill by spending a concentrated, short period of time can lead to the awarding of a competency in the form of a digital badge. Digital badges can be combined or a longer skill-based instructional path can be used to secure a micro-credential which may lead to college credit. Skills leading to digital badges and micro-credentials can be acquired in various ways including workshops, online classes, and focused courses through NMSU OnDemand or outside of NMSU.

The College of Engineering encourages students to engage in experiential and focused learning that leads to knowledge-based skills relevant in industry including specific software, project management, leadership, quality, entrepreneurship, and critical thinking. Digital badge and micro-credential earners can also benefit by having the ability to combine classroom knowledge with acquired skills, especially in design classes.

Other benefits of digital badges include: being able to choose what knowledge-based skills you want to develop; strategically combining several badges to form an overarching micro-credential; and sharing your achievements online with others including prospective employers. Badges and micro-credentials recognized by the College of Engineering are those that are validated by assessment, supported by evidence, and relevant to the practice of engineering.

Students in the College of Engineering have been earning digital badges and micro-credentials independently or through sponsored projects. Starting with this catalog, the College of Engineering degree programs are providing recommendations to students on what skills can enhance their learning and when in the curricular path would digital badges and overarching micro-credential be most beneficial. Specific information on digital badges and micro-credentials can be found on the degree program pages of the catalog.

Engineering Transfer Policy

NMSU Administrative Rules and Procedures, Section 4.61, Transfer Credit states the following: PART 3A, Student. "It is the student's responsibility to provide the necessary materials for consideration by Departmental Faculty of their requests for transfer credit" and PART 3B, Departmental Faculty. "Departmental Faculty review and decide requests for transfer credit". Policy for engineering majors enrolling in courses at other institutions to meet College of Engineering Departmental Core Requirements[1] includes:

1. NMSU main campus engineering majors may take core classes at other institutions of higher education to meet NMSU College of Engineering Departmental Core in the following situations: (1) if the NMSU core course cannot accommodate any more eligible students and (2) the course is not offered during a given semester of the academic year.
2. The following conditions and restrictions apply to any course not taken on the NMSU main campus.

- The department must approve the course prior to enrollment (student shall provide a corresponding course syllabus and any other documentation required to Department Head).

- The course must be a class in a program that is accredited by an accreditation commission of ABET, Inc. and cannot be graded in the S/U grade mode.
- The course must be substantially the same as the equivalent NMSU class and the student must have satisfied all NMSU prerequisite requirements.
- The student shall provide a corresponding course syllabus and any other documentation required.
- If NMSU prerequisite requirements are not satisfied, credit will be denied regardless of a passing grade for the course at the other institution.

In addition to 2 above, the following conditions apply to any on-line course not taken from the NMSU main campus.

- Scheduled exams, if any, shall be proctored[2].
- If NMSU prerequisite requirements are not satisfied, credit will be denied regardless of a passing grade for the course at the other institution.

[1] Core requirements are defined as required departmental, discipline-related courses within the major.

[2] The student may choose to have NMSU proctored exams.

For more information about transferring to New Mexico State University from another accredited institution, visit the NMSU Transfer Center.

Requirements for Graduation

The minimum requirements for undergraduate degrees are:

1. Satisfaction of the university requirements as previously outlined in the Regulations (https://catalogs.nmsu.edu/nmsu/regulations-policies/) section of this catalog.
2. Satisfaction of the college requirements as outlined under General Academic Requirements, above.
3. Satisfaction of the departmental rules and course requirements as outlined in the individual program descriptions.

NOTE: In order to maintain quality, remain current, and satisfy changes in accreditation criteria, requirements which have been published may be changed. Any such changes will be announced and will not be retroactive. Always consult an academic advisor from your department before registering for classes.

Master's Accelerated Program

Students who have a minimum GPA of 3.0 are eligible for the Masters Accelerated Program (MAP) in engineering. The MAP allows a student to earn both a bachelor's and master's degree in as little as five years.

A master's degree is increasingly becoming the professional degree of choice for engineering practice. Many employers encourage, or even require, their employees to seek the degree during their early career, and master's holders often experience increased upward mobility and earn substantially greater salaries as a result.

General requirements:

- It takes 30 to 32 credit hours to complete a master's degree.
- Up to 12 credits of your undergraduate coursework 450 and above may be counted toward the master's degree.
- It's possible to complete the master's degree in 2-3 semesters after graduation with a bachelor's degree.

Visit the Master's Accelerated Program (MAP) (https://honors.nmsu.edu/for-students/masters-accelerated-program-map.html) page for more information.

Graduate Degrees

Graduate study is available in

- Aerospace Engineering (https://catalogs.nmsu.edu/nmsu/engineering/mechanical-aerospace-engineering/#degreestext),
- Chemical Engineering (https://catalogs.nmsu.edu/nmsu/engineering/chemical-materials-engineering/#degreestext),
- Civil Engineering (https://catalogs.nmsu.edu/nmsu/engineering/civil-engineering/#degreestext),
- Electrical Engineering (https://catalogs.nmsu.edu/nmsu/engineering/electrical-computer-engineering/#degreestext),
- Environmental Engineering (https://catalogs.nmsu.edu/nmsu/engineering/civil-engineering/#degreestext),
- Industrial Engineering (https://catalogs.nmsu.edu/nmsu/engineering/industrial-engineering/#degreestext),
- Information Technology (https://catalogs.nmsu.edu/nmsu/engineering/engineering-technology-surveying/#degreestext), and
- Mechanical Engineering (https://catalogs.nmsu.edu/nmsu/engineering/mechanical-aerospace-engineering/#degreestext).

A multi-disciplinary graduate degree with concentration in Advanced Manufacturing (p.) is also available. See individual program descriptions for graduate degree requirements.